

REMARKS

Reconsideration of this application, as amended, is respectfully requested.

This application has been reviewed in light of the Office Action of the United States Patent and Trademark Office dated December 7, 2006. Claims 1-12 are currently pending in the present application with Claims 1, 4, 7 and 10 as independent claims.

Please amend Claims 7 and 10 as set forth herein. No new matter has been added.

In the Office Action, the Examiner rejected 7-12 under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter, which applicant regards as the invention. Claims 1-6 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Calderbank et al. (US Patent No. 6,127,971) in view of Foschini et al. (US 2002/0142723 A1). Claims 7, 9, 10 and 12 are rejected under 35 U.S.C. §102(e) as being anticipated by Tamaki et al. (US 2003/0124976). Claims 8 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Tamaki.

Calderbank discloses realization of enhanced performance in a wireless transmission arrangement that is subject to fading by employing a perspective that combines array signal processing with channel coding. Antennas at the transmitters are partitioned into small groups, and individual space-time codes are used to transmit information from each group of antennas. (See Abstract).

In rejecting Claims 7-12 under §112, second paragraph, the Examiner asserted that the term "the receivers" at line 6 of Claim 7 lacks antecedent basis; as set forth in claim 10, line 5. The Examiner further states that Claims 8-9 and 11-12 are rejected under a similar rationale. The rejection is not expressed in clear terms; therefore Applicant respectfully requests that the Examiner provides better guidance so the rejection may be obviated. Meanwhile, Claim 7 has been amended to further distinguish the invention, and simultaneously resolve the antecedent basis issue.

Regarding independent Claims 1 and 4, the rejections are traversed. In order for the Examiner to establish a *prima facie* case of obviousness, at least the prior art reference must teach or suggest all the claim limitations. The Examiner states that *Calderbank et al.* disclose a first, second and third encoders (110, 120, 130) corresponding to the frames of bits. The Examiner misapprehends *Calderbank*. Unlike the present invention, *Calderbank* only has one encoder connected to the transmitter. Since only one encoder is connected to a corresponding transmitter and the Examiner is citing that as reading on the configuration of the present invention, the conclusion drawn from such assertion is that the group in that case consists of one encoder. In contrast, the present invention discloses groups of encoders connected in such a way that the encoders in the first group encode k input bit groups whereas the encoders in the second group encode at least two bit groups among the k input bit groups. (See Specification page 13, lines 14-20). Furthermore, the configuration disclosed in the present invention is such that an encoder belonging to the second group is coupled to encoders in the first group. (See Fig. 1, 121-2.)

The input signal to encoders (110, 120 and 130) disclosed by *Calderbank* is simply the divided output signal from the Serial-to-Parallel (S/P) converter. In contrast, in the present invention the output signal from the Serial-to-Parallel (S/P) converter is split and fed to a first group encoders and a second group of encoders, which encode and transmit the overlapped signal. *Calderbank* discloses similar encoders with the first group of encoders of the present invention but fails to disclose the second group of encoders. Accordingly, *Calderbank* fails to teach, disclose or fairly suggest at least that limitation. Therefore, these rejections are traversed, because the prior art reference fails to teach or suggest all the claim limitations.

Regarding independent Claims 7 and 10, the Examiner cites *Tamaki* for teaching all the claim limitations of the claims. Specifically, the Examiner states that *Tamaki et al.* disclose a signal reception apparatus in a mobile communication system as shown in Figure 17 comprising: M antennas (1701a, 1701b, 1701c) connected to a receiver. (See Office Action, page 5, paragraph 6, lines 3-7.) Applicants respectfully disagree. A closer look at *Tamaki* reveals that the same antenna (1701a) is connected to both the receiver (1704a) and the transmitter (1705a)

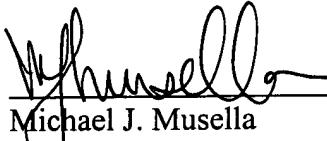
whereas in the present invention the arrangement is radically different. A group of antennas connected to a group of encoders constitute transmission antennas. (See Fig. 1 and Specification page 15 line 3-page 16, line 15.) Likewise, a different group of antennas connected to a group of receivers constitute reception antennas. See Fig. 2 and Specification page 15 line 3-page 16, line 15. Each of the transmission antennas transmits a transmission signal in one group, overlapped with a transmission signal in another group. Therefore, the reception antennas receive overlapped signals, and accordingly, the decoders perform a decoding operation on overlapped signals from different groups. (See Specification page 16, lines 5-10.)

It is rather clear from these passages that the configuration disclosed by *Tamark* is the polar opposite of the teachings of the present invention. Accordingly, these rejections are traversed, because the prior art reference fails to teach or suggest all the claim limitations. The Examiner thus fails to make a *prima facie* case of anticipation under 35 U.S.C. §102(e) and Claims 7 and 10 are erroneously rejected. Claims 7 and 10 have been amended and further distinguished.

Claims 2-3, 5-6, 8-9 and 11-12 depend from independent Claims 1, 4, 7 and 10. Therefore, without conceding the patentability *per se* of dependent Claims 2-3, 5-6, 8-9 and 11-12, they are believed to be patentably distinguished over the combination of *Calderbank et al.*, and *Foshini et al.*, and *Tamark* based on their respective dependency from independent Claims 1, 4, 7 and 10. Accordingly, reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of Claims 1-6, 8, 11 and the 35 U.S.C. § 102(e) rejection of Claims 7, 9-10, 12 are respectfully requested.

Accordingly, all of the claims pending in the Application, namely, Claims 1-12 are believed to be in condition for allowance. Allowance of these Claims is thus respectfully requested. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicant's attorney at the number given below.

Respectfully submitted,



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